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**TRANSMITTAL
FORM**

(to be used for all correspondence after initial filing)

Total Number of Pages in This Submission

Application Number	10/660,842
Filing Date	September 12, 2003
First Named Inventor	Pietraski et al.
Art Unit	2661
Examiner Name	Not Yet Known
Attorney Docket Number	I-2-0407.1US

ENCLOSURES (Check all that apply)

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| <input type="checkbox"/> Fee Transmittal Form
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<input type="checkbox"/> Proprietary Information
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<input checked="" type="checkbox"/> Other Enclosure(s) (please identify below):
Communication Re Favorable IPER
By IPEA/US In Corresponding
International Application |
|--|---|--|

Remarks

SIGNATURE OF APPLICANT, ATTORNEY, OR AGENT

Firm Name	VOLPE AND KOENIG, P.C.		
Signature			
Printed name	Gerald B. Halt, Jr.		
Date	10/11/04	Reg. No.	37,633

CERTIFICATE OF TRANSMISSION/MAILING

I hereby certify that this correspondence is being facsimile transmitted to the USPTO or deposited with the United States Postal Service with sufficient postage as first class mail in an envelope addressed to: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450 on the date shown below:

Signature			
Typed or printed name	Gerald B. Halt, Jr.	Date	10/11/04

This collection of information is required by 37 CFR 1.5. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to 2 hours to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

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PATENT

THE UNITED STATES PATENT AND TRADEMARK OFFICE

In the **PATENT APPLICATION** of:

Pietraski et al.

Application No.: 10/660,842

Confirmation No.: 7867

Filed: September 12, 2003

For: MITIGATION OF INTERFERENCE IN
CELL SEARCH BY WIRELESS TRANSMIT
AND RECEIVE UNITS

Group: 2661

Examiner: Not Yet Known

Our File: I-2-0407.1US

Date: October 11, 2004

**COMMUNICATION RE FAVORABLE IPER BY
IPEA/US IN CORRESPONDING INTERNATIONAL APPLICATION**

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

This communication is to advise the Examiner of the favorable International Preliminary Examination Report (IPER) issued by the United States Patent and Trademark Office acting as International Preliminary Examination Authority in a corresponding international application. A copy of the IPER is enclosed.

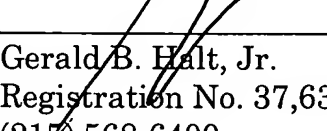
The original PCT claims correspond to the claims in this U.S. application. A copy of the approved claims as published is also enclosed.

Applicant: Pietraski et al.
Application No.: 10/660,842

In view of the fact that PCT claims 1-22 have all been found to meet the international standards of patentability, prompt examination and allowance are respectfully requested.

Respectfully submitted,

Pietraski et al.

By 
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Registration No. 37,633
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GBH/kag
Enclosures (2)

PATENT COOPERATION TREATY

GBH
(536)

From the
INTERNATIONAL PRELIMINARY EXAMINING AUTHORITY

<p>To: ANTHONY S. VOLPE VOLPE AND KOENIG, P.C. UNITED PLAZA, 30 SOUTH 17TH STREET PHILADELPHIA, PA 19103</p>	<p>RECEIVED</p> <p>SEP 23 2004</p> <p>VOLPE & KOENIG, P.C.</p>	
<p>AM/PM</p> <p>PCT</p> <p>NOTIFICATION OF TRANSMITTAL OF INTERNATIONAL PRELIMINARY EXAMINATION REPORT (PCT Rule 71.1)</p>		
<p>Date of Mailing (day/month/year) 20 SEP 2004</p>		
<p>Applicant's or agent's file reference I-2-0407.1WO</p>		
<p>IMPORTANT NOTIFICATION</p>		
<p>International application No. PCT/US03/28792</p>	<p>International filing date (day/month/year) 12 September 2003 (12.09.2003)</p>	<p>Priority date (day/month/year) 12 September 2002 (12.09.2002)</p>
<p>Applicant INTERDIGITAL TECHNOLOGY CORPORATION</p>		

1. The applicant is hereby notified that this International Preliminary Examining Authority transmits herewith the international preliminary examination report and its annexes, if any, established on the international application.
2. A copy of the report and its annexes, if any, is being transmitted to the International Bureau for communication to all the elected Offices.
3. Where required by any of the elected Offices, the International Bureau will prepare an English translation of the report (but not of any annexes) and will transmit such translation to those Offices.
4. **REMINDER**

The applicant must enter the national phase before each elected Office by performing certain acts (filing translations and paying national fees) within 30 months from the priority date (or later in some Offices)(Article 39(1))(see also the reminder sent by the International Bureau with Form PCT/IB/301).

Where a translation of the international application must be furnished to an elected Office, that translation must contain a translation of any annexes to the international preliminary examination report. It is the applicant's responsibility to prepare and furnish such translation directly to each elected Office concerned.

For further details on the applicable time limits and requirements of the elected Offices, see Volume II of the PCT Applicant's Guide.

<p>Name and mailing address of the IPEA/US Mail Stop PCT, Attn: IPEA/US Commissioner for Patents P.O. Box 1450 Alexandria, Virginia 22313-1450 Facsimile No. (703) 305-3230</p>	<p>Authorized officer Stephen Chin <i>Rugenia Logan</i> Telephone No. NONE</p>
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Form PCT/IPEA/416 (July 1992)

DOCKETED FOR 3/12/05 - PCT 30 MONTH DEADLINE

PATENT COOPERATION TREATY

PCT

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference I-2-0407.1WO	FOR FURTHER ACTION See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416)	
International application No. PCT/US03/28792	International filing date (day/month/year) 12 September 2003 (12.09.2003)	Priority date (day/month/year) 12 September 2002 (12.09.2002)
International Patent Classification (IPC) or national classification and IPC IPC(7): H04B 1/69, 1/707, 1/713; and US Cl.: 375/130		
Applicant INTERDIGITAL TECHNOLOGY CORPORATION		
<p>1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.</p> <p>2. This REPORT consists of a total of <u>3</u> sheets, including this cover sheet.</p> <p><input type="checkbox"/> This report is also accompanied by ANNEXES, i.e., sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).</p> <p>These annexes consist of a total of ___ sheets.</p> <p>3. This report contains indications relating to the following items:</p> <p>I <input checked="" type="checkbox"/> Basis of the report</p> <p>II <input type="checkbox"/> Priority</p> <p>III <input type="checkbox"/> Non-establishment of report with regard to novelty, inventive step and industrial applicability</p> <p>IV <input type="checkbox"/> Lack of unity of invention</p> <p>V <input checked="" type="checkbox"/> Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement</p> <p>VI <input type="checkbox"/> Certain documents cited</p> <p>VII <input type="checkbox"/> Certain defects in the international application</p> <p>VIII <input type="checkbox"/> Certain observations on the international application</p>		
Date of submission of the demand 12 April 2004 (12.04.2004)	Date of completion of this report 18 August 2004 (18.08.2004)	
Name and mailing address of the IPEA/US Mail Stop PCT, Attn: IPEA/US Commissioner for Patents P.O. Box 1450 Alexandria, Virginia 22313-1450 Facsimile No. (703) 305-3230	Authorized officer Stephen Chin <i>Rugenia Logan</i> Telephone No. NONE	

Form PCT/IPEA/409 (cover sheet)(July 1998)

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No.

PCT/US03/28792

I. Basis of the report

1. With regard to the elements of the international application:*

☒ the international application as originally filed.☒ the description:

pages 1-9 as originally filed

pages NONE, filed with the demand

pages NONE, filed with the letter of _____.

☒ the claims:

pages 10-14, as originally filed

pages NONE, as amended (together with any statement) under Article 19

pages NONE, filed with the demand

pages NONE, filed with the letter of _____.

☒ the drawings:

pages 1-4, as originally filed

pages NONE, filed with the demand

pages NONE, filed with the letter of _____.

☐ the sequence listing part of the description:

pages NONE, as originally filed

pages NONE, filed with the demand

pages NONE, filed with the letter of _____.

2. With regard to the language, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.

These elements were available or furnished to this Authority in the following language _____ which is:

☐ the language of a translation furnished for the purposes of international search (under Rule 23.1(b)).☐ the language of publication of the international application (under Rule 48.3(b)).☐ the language of the translation furnished for the purposes of international preliminary examination (under Rules 55.2 and/or 55.3).

3. With regard to any nucleotide and/or amino acid sequence disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:

☐ contained in the international application in printed form.☐ filed together with the international application in computer readable form.☐ furnished subsequently to this Authority in written form.☐ furnished subsequently to this Authority in computer readable form.☐ The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.☐ The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.4. ☐ The amendments have resulted in the cancellation of:☐ the description, pages NONE☐ the claims, Nos. NONE☐ the drawings, sheets/fig NONE5. ☐ This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).**

* Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report since they do not contain amendments (Rules 70.16 and 70.17).

** Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report.

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No.
PCT/US03/28792**V. Reasoned statement under Rule 66.2(a)(ii) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement****1. STATEMENT**

Novelty (N)	Claims <u>1-22</u>	YES
	Claims <u>NONE</u>	NO
Inventive Step (IS)	Claims <u>1-22</u>	YES
	Claims <u>NONE</u>	NO
Industrial Applicability (IA)	Claims <u>1-22</u>	YES
	Claims <u>NONE</u>	NO

2. CITATIONS AND EXPLANATIONS

Claims 1-22 meet the criteria set out in PCT Article 33(4), and thus satisfy industrial applicability because the subject matter claimed can be made or used in industry.

Claims 1-22 meet the criteria set out in PCT Article 33(2)-(3), because the prior art does not teach or fairly suggest the following limitations:

In Claims 1 and 12-

N circuits providing accumulated values corresponding to the respective absolute value outputs; and

N circuits for dividing the accumulated values with an estimated noise value, and providing ratios of the accumulated values to the threshold.

In Claim 3 and 14-

an auxiliary code correlator having a substantially similar length as the code correlator for correlating the received signal with a code having a low cross correlation with the primary synchronization code

In Claim 9 and 20-

determining an index of the accumulated result indicating a most significant bit...the accumulated result by the noise estimate.

----- NEW CITATIONS -----
NONE

CLAIMS

What is claimed is:

1. A cell search circuit comprising:
a splitter receiving received samples, and outputting a plurality of N sample sets;
N circuits receiving respective ones of the sample sets and providing respective absolute value outputs corresponding to a primary synchronization code correlation to each sample set;
N circuits providing accumulated values corresponding to the respective absolute value outputs; and
N circuits for dividing the accumulated values with an estimated noise value, and providing ratios of the accumulated values to the threshold.
2. The cell search circuit of claim 1 wherein a value of N is two and the sample sets are an even and odd sample set.
3. A cell search circuit comprising:
a code correlator for correlating a received signal with a primary synchronization code;
an auxiliary code correlator having a substantially similar length as the code correlator for correlating the received signal with a code having a low cross correlation with the primary synchronization code; and
a scaling circuit for scaling an output of the correlation with the primary synchronization code by an output of the auxiliary code correlator.
4. The cell search circuit of claim 3 wherein the code correlator and the auxiliary code correlator are hierarchal Golay correlators.
5. The cell search circuit of claim 3 wherein the code having a low cross correlation with the primary synchronization code has a low cross correlation with secondary synchronization codes.

6. The cell search circuit of claim 3 wherein the scaling circuit comprises a circuit performing a division function.

7. The cell search circuit of claim 3 comprising at least one additional code correlator for correlating the received signal with a primary synchronization code, the code correlator and each at least one additional code correlator processing a respective set of samples corresponding to a respective multiple N of a chip rate of the samples.

8. The cell search circuit of claim 7 wherein the auxiliary code correlator only receives one set of the respective sets of samples.

9. A cell search circuit comprising:
a code correlator for correlating a received signal with a primary synchronization code;
an accumulator for accumulating a result of the correlations of the received signal with a primary synchronization code;
a noise estimation circuit for estimating noise; and
a circuit for functionally dividing the accumulated result with the estimated noise by:
determining an index of the accumulated result indicating a most significant bit;
determining an index of the estimated noise indicating a most significant bit;
subtracting the estimated noise index from the accumulated result index; and
using a result of the subtraction to determine a division of the accumulated result by the noise estimate.

10. The cell search circuit of claim 9 further comprising taking a log of n bits at and following each index in the accumulated result and the estimated

noise and subtracting the log of the n bits of the estimated noise from the log of the n bits of the accumulated result to determine a division of the accumulated result by the noise estimate.

11. The cell search circuit of claim 10 wherein the taking a log of the n bits is by using a look-up table for $n-1$ bit after the index.

12. A wireless transmit/receive unit (WTRU) for performing cell search comprising:

a splitter receiving received samples, and outputting a plurality of N sample sets;

N circuits receiving respective ones of the sample sets and providing respective absolute value outputs corresponding to a primary synchronization code correlation to each sample set;

N circuits providing accumulated values corresponding to the respective absolute value outputs; and

N circuits for dividing the accumulated values with an estimated noise value, and providing ratios of the accumulated values to the threshold.

13. The WTRU of claim 12 wherein a value of N is two and the sample sets are an even and odd sample set.

14. A wireless transmit/receive unit (WTRU) for performing cell search comprising:

a code correlator for correlating a received signal with a primary synchronization code;

an auxiliary code correlator having a substantially similar length as the code correlator for correlating the received signal with a code having a low cross correlation with the primary synchronization code; and

a scaling circuit for scaling an output of the correlation with the primary synchronization code by an output of the auxiliary code correlator.

15. The WTRU of claim 14 wherein the code correlator and the auxiliary code correlator are hierarchal Golay correlators.

16. The WTRU of claim 14 wherein the code having a low cross correlation with the primary synchronization code has a low cross correlation with secondary synchronization codes.

17. The WTRU of claim 14 wherein the scaling circuit comprises a circuit performing a division function.

18. The WTRU of claim 14 comprising at least one additional code correlator for correlating the received signal with a primary synchronization code, the code correlator and each at least one additional code correlator processing a respective set of samples corresponding to a respective multiple N of a chip rate of the samples.

19. The WTRU of claim 18 wherein the auxiliary code correlator only receives one set of the respective sets of samples.

20. A wireless transmit/receive unit for performing cell search comprising:

- a code correlator for correlating a received signal with a primary synchronization code;

- an accumulator for accumulating a result of the correlations of the received signal with a primary synchronization code;

- a noise estimation circuit for estimating noise; and

- a circuit for functionally dividing the accumulated result with the estimated noise by:

- determining an index of the accumulated result indicating a most significant bit;

determining an index of the estimated noise indicating a most significant bit;

subtracting the estimated noise index from the accumulated result index;

using a result of the subtraction to determine a division of the accumulated result by the noise estimate.

21. The WTRU of claim 20 further comprising taking a log of n bits at and following each index in the accumulated result and the estimated noise and subtracting the log of the n bits of the estimated noise from the log of the n bits of the accumulated result to determine a division of the accumulated result by the noise estimate.

22. The WTRU of claim 21 wherein the taking a log of the n bits is by using a look-up table for $n-1$ bit after the index.